


# Cummins

## Technical Operations



**ENGINE MODEL: 6CTA8.3-C260**  
**CURVE & DATASHEET: FR92617**

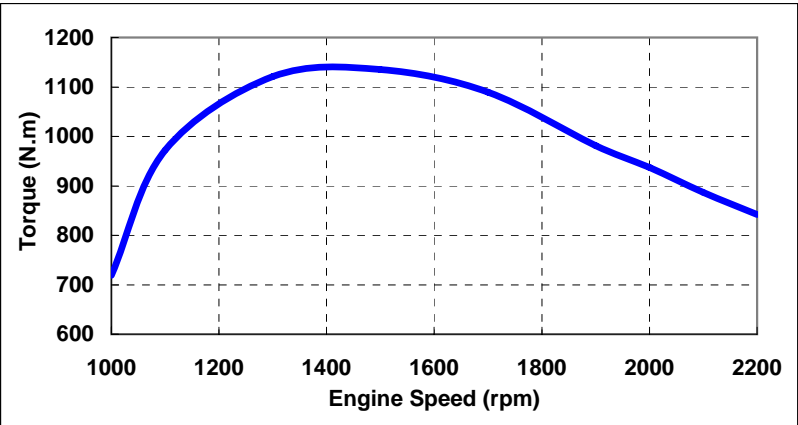
Rev00 Mar 15, 2008

|   |                                 |  |                          |                                 |                                  |
|---|---------------------------------|--|--------------------------|---------------------------------|----------------------------------|
|  | <b>Engine Performance Curve</b> | Basic Engine Model:<br><b>6CTA8.3-C260</b> |                          | Curve Number:<br><b>FR92617</b> | <i>Pg. No :</i><br><br><b>01</b> |
|   |                                 | Engine Family:<br><b>D41</b>               | CPL Code:<br><b>0399</b> | Date:<br><b>2008-03</b>         |                                  |

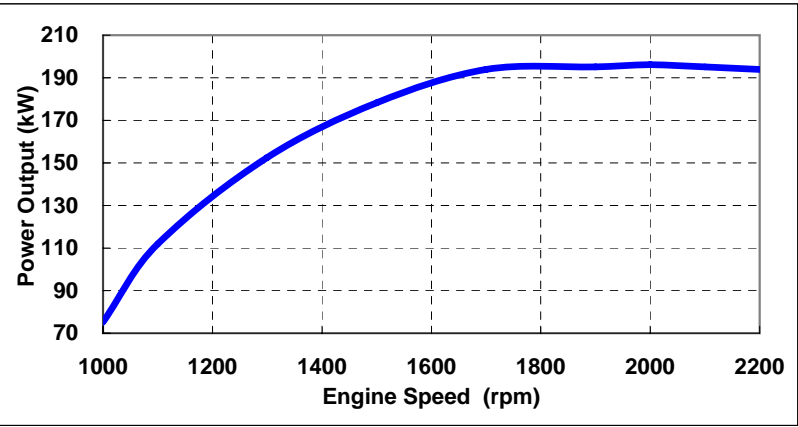
|                   |               |                  |                                       |                               |             |
|-------------------|---------------|------------------|---------------------------------------|-------------------------------|-------------|
| Displacement:     | <b>8.3 L</b>  | Aspiration:      | <b>Turbocharged &amp; Aftercooled</b> |                               |             |
| Bore:             | <b>114 mm</b> |                  |                                       | kW (BHP)                      | @ RPM       |
| Stroke:           | <b>135 mm</b> | No.of Cylinders: | <b>6</b>                              | <b>194(260)</b>               | <b>2200</b> |
| Emission Control: |               | Fuel System:     | <b>Weifu PW2000/RSV</b>               | <b>8% Governor Regulation</b> |             |

All data are based on the engine operating with fuel system,water pump,lubricating oil pump,and 3.4kPa inlet air restriction and with 10kPa exhaust restriction; not included are alternator,fan,optional equipment and driven components.

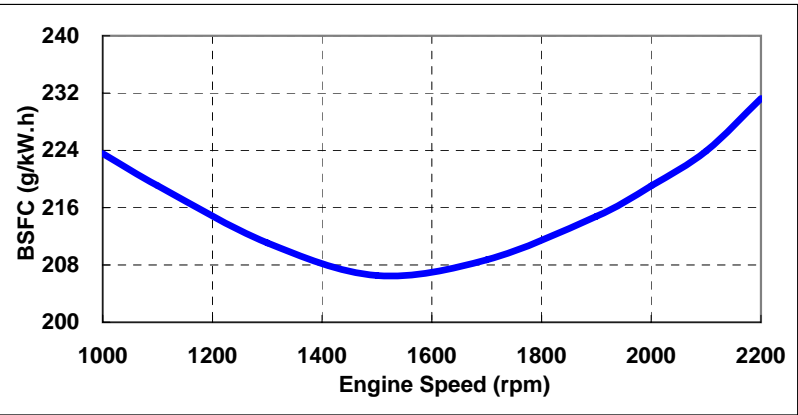
Performance Curve



| TORQUE |      |
|--------|------|
| rpm    | N.m  |
| 2200   | 842  |
| 2100   | 887  |
| 2000   | 937  |
| 1900   | 981  |
| 1700   | 1089 |
| 1500   | 1135 |
| 1300   | 1121 |
| 1100   | 972  |
| 1000   | 719  |



| POWER OUTPUT |     |
|--------------|-----|
| rpm          | kW  |
| 2200         | 194 |
| 2100         | 195 |
| 2000         | 196 |
| 1900         | 195 |
| 1700         | 194 |
| 1500         | 178 |
| 1300         | 153 |
| 1100         | 112 |
| 1000         | 75  |



| FUEL CONSUMPTION |        |
|------------------|--------|
| rpm              | g/kW.h |
| 2200             | 231    |
| 2100             | 224    |
| 2000             | 219    |
| 1900             | 215    |
| 1700             | 209    |
| 1500             | 207    |
| 1300             | 211    |
| 1100             | 219    |
| 1000             | 224    |



## Base Engine Data Sheet

Pg. No:  
02

|                       |                         |                    |                           |       |                   |
|-----------------------|-------------------------|--------------------|---------------------------|-------|-------------------|
| ENGINE MODEL:         | <b>6CTA8.3-C260</b>     | CPL NUMBER:        | <b>0399</b>               | DATA: | <b>2008-03-15</b> |
| CONFIGURATION NUMBER: | <b>D413061CX02</b>      | PERFORMANCE CURVE: | <b>FR92617</b>            |       |                   |
| AFTERCOOLED SYSTEM:   | <b>JWAC</b>             | RATED POWER:       | <b>260 bhp @ 2200 rpm</b> |       |                   |
| FUEL SYSTEM:          | <b>Weifu PW2000/RSV</b> |                    | <b>194 kW @ 2200 rpm</b>  |       |                   |

### GENERAL ENGINE DATA

|  |                    |             |
|--|--------------------|-------------|
| Engine Wet Weight (Pricing Configuration) .....                    | -kg                | <b>637</b>  |
| Moment of Inertia of Rotating Components(Excluding Flywheel) ..... | -kg-m <sup>2</sup> | <b>0.37</b> |
| Center of Gravity from Front Face of Block .....                   | -mm                | <b>427</b>  |
| Center of Gravity above Crankshaft Centerline .....                | -mm                | <b>163</b>  |

### ENGINE MOUNTING

|   |                    |             |
|---|--------------------|-------------|
| Maximum (Static) Bending Moment at Front Support Mounting Surface ..... | -N.m               | <b>495</b>  |
| Maximum (Static) Bending Moment at Side Pad Mounting Surface .....      | -N.m               | <b>TBD</b>  |
| Maximum (Static) Bending Moment at Rear Face of Block .....             | -N.m               | <b>1356</b> |
| Moment of Inertia of Complete Engine                                    |                    |             |
| - Roil Axis .....   | -kg-m <sup>2</sup> | <b>23.6</b> |
| - Pitch Axis .....  | -kg-m <sup>2</sup> | <b>65.2</b> |
| - Yaw Axis .....  | -kg-m <sup>2</sup> | <b>55.9</b> |

### EXHAUST SYSTEM

|   |         |             |
|---|---------|-------------|
| Maximum Back Pressure .....   | -mmHg   | <b>76</b>   |
| Exhaust Pipe Size Normally Acceptable .....                             | -mm     | <b>75</b>   |
| Maximum Static Supported Weight at the Turbocharger Outlet Flange ..... | -N.m    | <b>22.7</b> |
| Exhaust Manifold Insulation Acceptable .....                            | -Yes/No | <b>No</b>   |
| Turbocharger Insulation Acception .....                                 | -Yes/No | <b>No</b>   |

### AIR INTAKE SYSTEM

|   |                     |            |
|---|---------------------|------------|
| Maximum Intake Air Restriction with Heavy Duty Air Cleaner                      |                     |            |
| -Clean Element .....  | -mmH <sub>2</sub> O | <b>381</b> |
| -Dirty Element .....  | -mmH <sub>2</sub> O | <b>635</b> |
| Minimum Dirt Holding Capacity with Heavy Duty Air Cleaner .....                 | -g/litre/sec.       | <b>53</b>  |
| Maximum Temperature Rise from Ambient to the Inlet of the Turbocharger .....    | -°C                 | <b>17</b>  |
| Maximum Pressure Drop from the Turbocharger Outlet to the Intake Manifold ..... | -kPa                | <b>TBD</b> |

### LUBRICATION SYSTEM

|   |             |                  |
|---|-------------|------------------|
| Normal Operating Oil Pressure Range .....   | -kPa        | <b>276 - 345</b> |
| Maximum Lube Oil Flow for Engine Accessories .....                                    | -litre/min. | <b>7.6</b>       |
| Maximum Sump Oil Temperature .....  | -°C         | <b>121</b>       |
| Minimum Engine Oil Pressure for Engine Protection Devices:                            |             |                  |
| -At Rated Speed and Load .....  | -kPa        | <b>276</b>       |
| -At Torque Peak Speed and Load .....  | -kPa        | <b>207</b>       |
| -At Low Idle .....  | -kPa        | <b>69</b>        |
| Minimum Required Lube System Capacity - Sump plus Filters .....                       | -litre      | <b>21.9</b>      |
| By-pass Filtration Required .....   | -Yes/No     | <b>Yes</b>       |
| Angularity of Standard Oil Pan:(Values stated are for intermittent operation only):OP |             |                  |
| -Front Down .....   | - degrees   | <b>45</b>        |
| -Front Up .....   | - degrees   | <b>45</b>        |
| -Side to Side .....   | - degrees   | <b>45</b>        |

NOTE: Conditions refer to rated power and speed unless otherwise noted.

TBD - To Be Determined

N/A - Not Applicable

**COOLING SYSTEM**

|   |             |                |
|---|-------------|----------------|
| Coolant Capacity - Engine Only .....  | -litre      | <b>9.8</b>     |
| Maximum Engine Cooling Circuit External Resistance .....  | -kPa        | <b>34</b>      |
| Minimum Pump Inlet Pressure with Open Thermostat and no Pressure Cap .....                      | -mmHg       | <b>TBD</b>     |
| Maximum Static Head of Coolant Above Engine Crankshaft Centerline .....                         | -m          | <b>TBD</b>     |
| Standard (modulating) Thermostat Range .....  | -°C         | <b>83 - 95</b> |
| Maximum Block Coolant Pressure with Closed Thermostat and no Pressure Cap ....                  | -kPa        | <b>276</b>     |
| Minimum Pressure Cap .....  | -kPa        | <b>50</b>      |
| Maximum Engine Coolant Temperature at Engine Outlet .....                                       | -°C         | <b>98.9</b>    |
| Maximum Engine Coolant Temperature for Engine Protection Devices .....                          | -°C         | <b>104.4</b>   |
| Minimum Engine Coolant Temperature at.....  | -°C         | <b>79.4</b>    |
| Minimum Fill Rate .....   | -litre/min. | <b>19</b>      |
| Maximum Initial Fill Time .....   | -min.       | <b>5</b>       |
| Minimum Coolant Expansion Space .....   | - %         | <b>6</b>       |
| Maximum Deaeration Time .....   | -min.       | <b>25</b>      |
| Minimum Drawdown .....  | - %         | <b>11%</b>     |
| (Drawdown Must Exceed the Volume Not Filled at Initial Fill & Must Not Include Expansion Space) |             |                |
| Fan-on Engine Coolant Outlet Temperature .....  | -°C         | <b>93</b>      |
| Shutter Opening Coolant Outlet Temperature .....  | -°C         | <b>93</b>      |
| Shutter Opening Intake Manifold Air Temperature .....   | -°C         | <b>N/A</b>     |

**CRANKING SYSTEM****12 Volt 24 Volt**

|  |        |                 |
|--|--------|-----------------|
| Minimum Battery Capacity - Cold Soak at -18°C or Above       |        |                 |
| -Engine Only - Cold Cranking Amperes .....                   | -CCA   | <b>1250 625</b> |
| -Engine Only - Reserve Capacity .....                        | -min.  | <b>360 180</b>  |
| Maximum Starting Circuit Voltage Drop @ --- Amperes .....    | -Volts | <b>TBD</b>      |
| Minimum Ambient Temperature for Unaided Cold Start .....     | -°C    | <b>-12</b>      |
| Minimum Cranking Speed Required for Unaided Cold Start ..... | -rpm   | <b>120</b>      |
| Breakaway Torque at Minimum Unaided Start Temperature .....  | -N.m   | <b>1051</b>     |
| Cranking Torque at Minimum Unaided Start Temperature.....    | -N.m   | <b>508</b>      |
| Cranking Torque at -10°C.....                                | -N.m   | <b>TBD</b>      |

**FUEL SYSTEM**

|   |            |            |
|---|------------|------------|
| Maximum Fuel Flow on the Supply Side of the Fuel Pump .....                                   | -litre/hr. | <b>300</b> |
| Maximum Fuel Inlet Restriction  |            |            |
| -with clean fuel filter .....   | -mmHg      | <b>102</b> |
| -with dirty fuel filter .....   | -mmHg      | <b>203</b> |
| Maximum Fuel Drain Restriction  |            |            |
| -with check valves .....  | -mmHg      | <b>510</b> |
| -less check valves.....   | -mmHg      | <b>TBD</b> |
| Maximum Fuel Inlet Temperature .....  | -°C        | <b>71</b>  |
| Minimum Fuel Tank Air Venting Capability Required at 6 inH <sub>2</sub> O Back Pressure ..... | -litre/hr. | <b>340</b> |

NOTE: Conditions refer to rated power and speed unless otherwise noted.

TBD - To Be Determined

N/A - Not Applicable



## PERFORMANCE DATA

Pg. No:  
04

|  |      |             |
|--|------|-------------|
| Minimum Low Idle Speed .....   | -rpm | <b>1000</b> |
| Maximum Governed Speed.....  | -rpm | <b>2460</b> |
| Maximum Overspeed Capability .....                                   | -rpm | <b>3750</b> |
| Closed Throttle Torque @ 700 rpm (for 1000 rpm Low Idle Speed) ..... | -N.m | <b>606</b>  |
| Minimum Combined Converter and Hydraulic Stall Speed .....           | -rpm | <b>1600</b> |
| Crankshaft Thrust Bearing Load Limit                                 |      |             |
| -Maximum Intermittent .....  | -N   | <b>1627</b> |
| -Maximum Continuous .....  | -N   | <b>1085</b> |

### EMISSIONS

Estimated Free Field Sound Pressure Level At 15m and Full Load Governed Speed

(Excludes Noise from Intake,Exhaust,Cooling System and Driven Components)

|                   |      |            |
|-------------------|------|------------|
| -Right Side ..... | -dBa | <b>TBD</b> |
| -Left Side .....  | -dBa | <b>TBD</b> |
| -Front .....      | -dBa | <b>TBD</b> |
| -Rear .....       | -dBa | <b>TBD</b> |

Gaseous Emissions per ISO 8178:

|                    |        |            |
|--------------------|--------|------------|
| -NOx.....          | g/kW.h | <b>TBD</b> |
| -HC.....           | g/kW.h | <b>TBD</b> |
| -CO.....           | g/kW.h | <b>TBD</b> |
| -Particulates..... | g/kW.h | <b>TBD</b> |

Fuel Rating Option used for these Data: **FR92167**

|  |             |
|--|-------------|
| Engine Speed.....                                | -rpm        |
| Gross Power Output.....                          | -kW         |
| Torque .....                                     | -N.m        |
| Intake Manifold Pressure .....                   | -kPa        |
| Motoring Friction Horsepower .....               | -kW         |
| Turbocharger Compressor Outlet Pressure .....    | -kPa        |
| Intake Air Flow .....                            | -litre/sec. |
| Exhaust Gas Flow .....                           | -litre/sec. |
| Turbocharger Compressor Outlet Temperature ..... | -°C         |
| Exhaust Gas Temperature - Dry Stack .....        | -°C         |
| Heat Rejection to Ambient (Dry Manifold) .....   | -kW         |
| Heat Rejection to Coolant (Dry Manifold) .....   | -kW         |
| Heat Rejection to Fuel .....                     | -kW         |
| Engine Coolant Flow .....                        | -litre/sec. |
| @ External Cooling Circuit Resistance .....      | -kPa△ P     |
| Altitude Limitations:                            |             |
| -Intermittent.....                               | -m          |
| -Continuous.....                                 | -m          |
| Steady State Smoke .....                         | -Bosch      |

| RATED       | MAX<br>POWER POINT | PEAK<br>TORQUE |
|-------------|--------------------|----------------|
| <b>2200</b> |                    | <b>1500</b>    |
| <b>194</b>  |                    | <b>178</b>     |
| <b>842</b>  |                    | <b>1135</b>    |
| <b>158</b>  |                    | <b>145</b>     |
| <b>TBD</b>  |                    | <b>TBD</b>     |
| <b>164</b>  |                    | <b>147</b>     |
| <b>309</b>  |                    | <b>194</b>     |
| <b>874</b>  |                    | <b>568</b>     |
| <b>168</b>  |                    | <b>150</b>     |
| <b>480</b>  |                    | <b>509</b>     |
| <b>TBD</b>  |                    | <b>TBD</b>     |
| <b>TBD</b>  |                    | <b>TBD</b>     |
| <b>TBD</b>  |                    | <b>TBD</b>     |
| <b>5.0</b>  |                    | <b>3.4</b>     |
| <b>34.5</b> |                    | <b>17.3</b>    |
|             |                    |                |
| <b>3000</b> |                    | <b>3000</b>    |
| <b>2200</b> |                    | <b>2200</b>    |
| <b>1.21</b> |                    | <b>0.96</b>    |

NOTE: Conditions refer to rated power and speed unless otherwise noted.

TBD - To Be Determined

N/A - Not Applicable